

WHO SHALL FEED THE WORLD'S HUNGRY?

... WILL THERE BE ENOUGH?

... WHO WILL GET IT?

... HOW WILL IT BE SHARED?

for

Clergy Economic Education Conference

Sharon, Pennsylvania

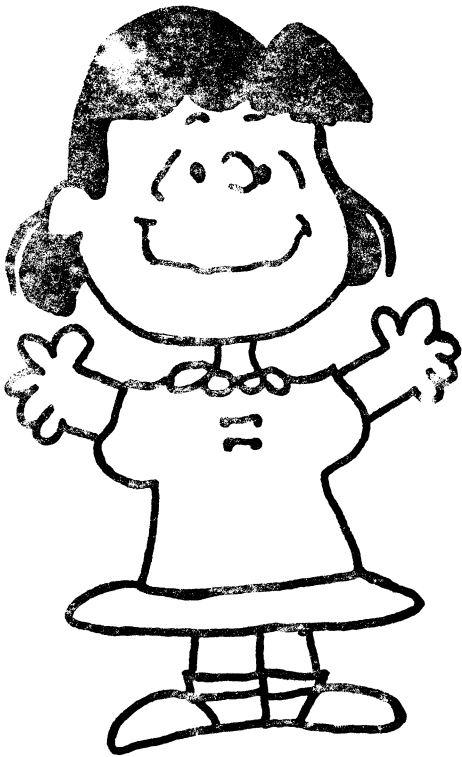
April 27, 1976

by

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THE OPTIMIST

LOOKS AT THE WORLD FOOD PICTURE
AND SAYS:

FOOD PRODUCTION WILL INCREASE

....NEW TECHNOLOGY

... ENERGY FOR FERTILIZER AND FUEL

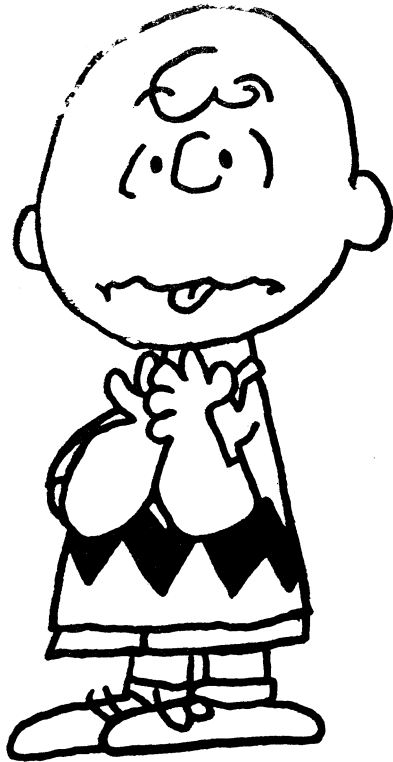
....MORE LAND UNDER CULTIVATION

....MORE IRRIGATION

FOOD AID WILL BE AVAILABLE

POPULATION WILL GROW BUT NOT AS FAST

.... BOTTOM LINE: QUANTITY OF FOOD PER
CAPITA WILL INCREASE



THE PESSIMIST

LOOKS AT THE WORLD FOOD PROBLEM
AND SAYS:

POPULATION -- INCREASING AT A TREMENDOUS RATE

FOOD PRODUCTION -- WILL INCREASE, BUT...

....NEW TECHNOLOGY NOT AS PROMISING

....MOST GOOD LAND IN PRODUCTION

....ENERGY COSTS ARE HIGH

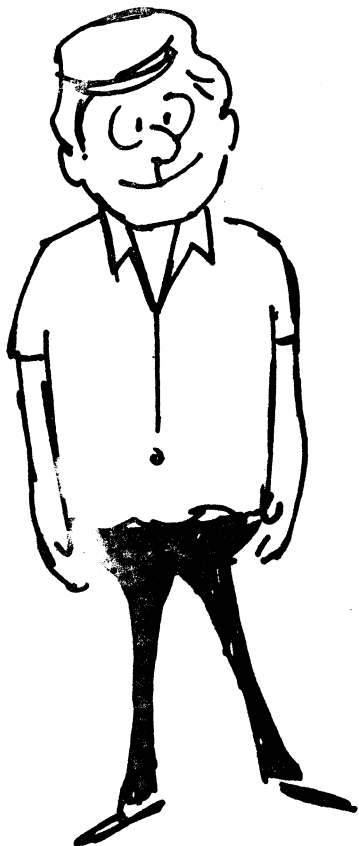
WEATHER -- PLANET EARTH IS COOLING OFF

....BOTTOM LINE: WE'LL DO WELL TO MAINTAIN

PRESENT LEVELS OF FOOD PER CAPITA

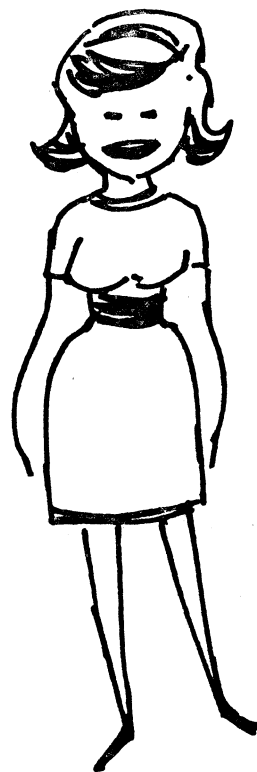
RECOMMENDED DAILY CALORIE INTAKE

150# MAN



2700 CALORIES

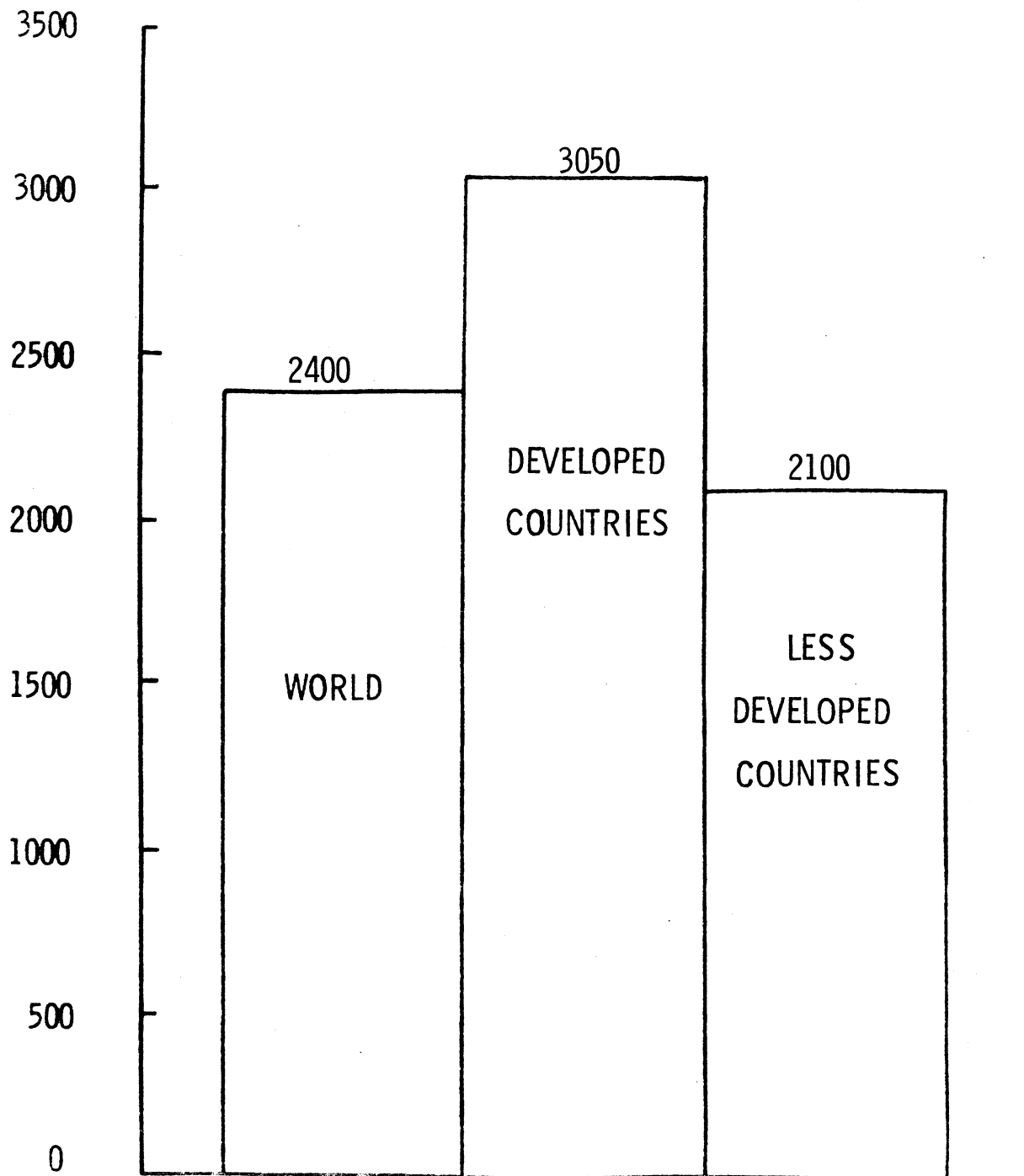
120# WOMAN



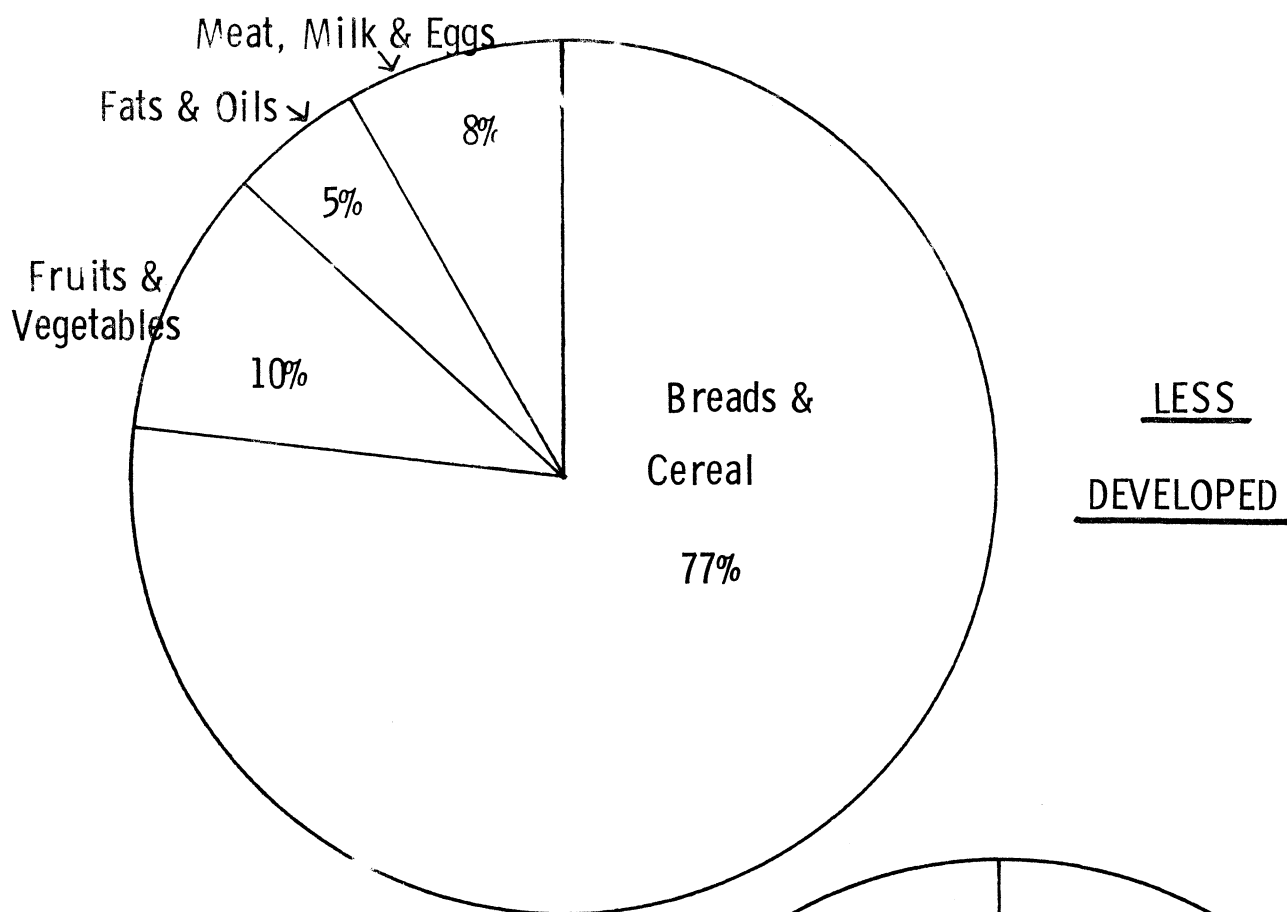
2200 CALORIES

CALORIES CONSUMED PER PERSON PER DAY

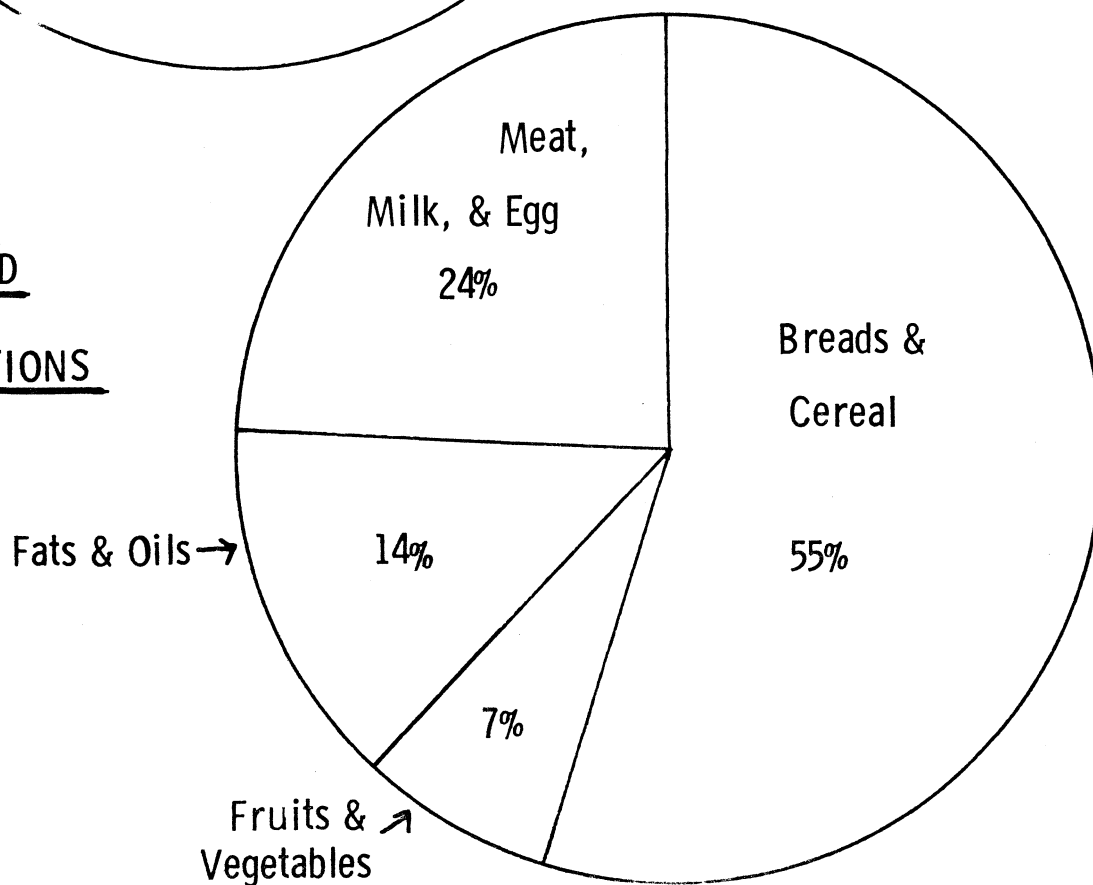
CALORIES (EST. AVERAGE)



PERCENT OF CALORIES CONSUMED FROM IMPORTANT SOURCES



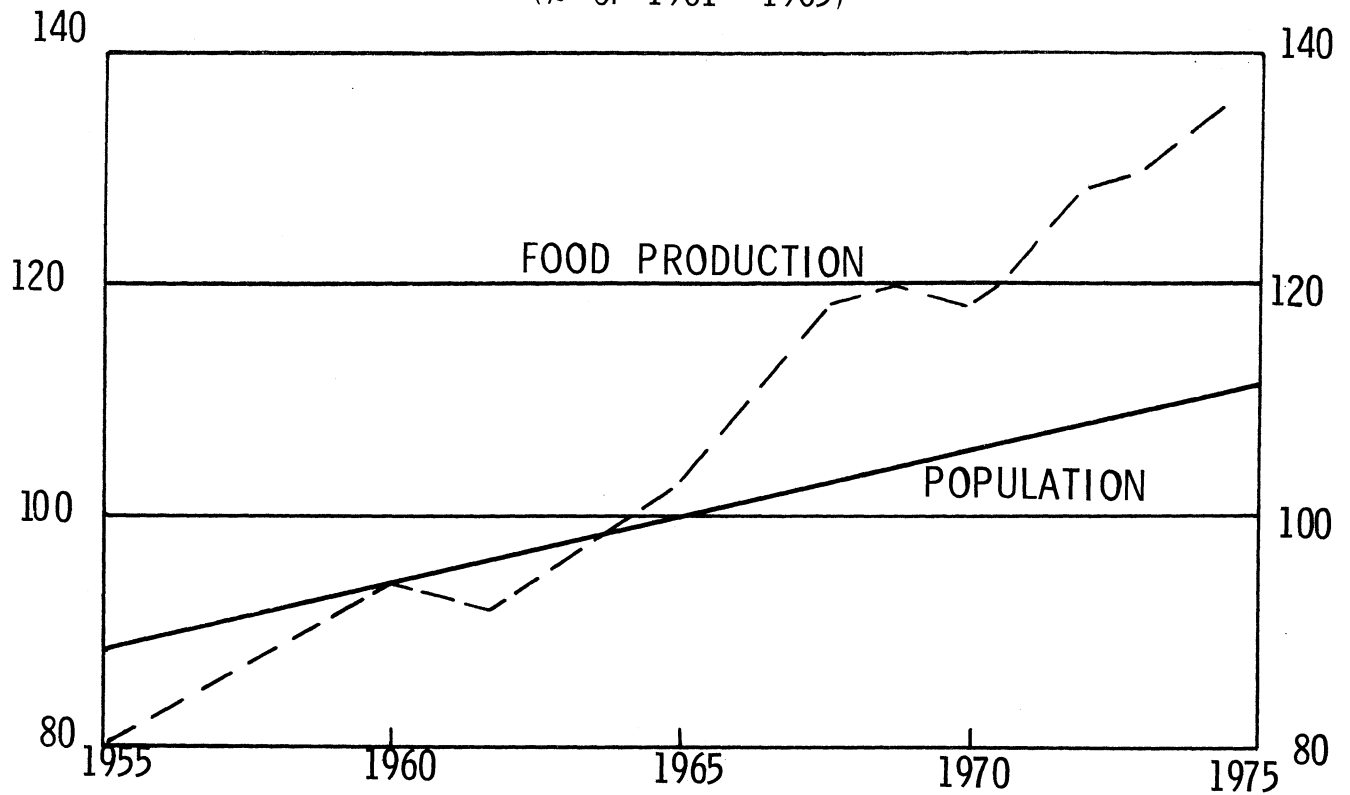
DEVELOPED NATIONS



FOOD PRODUCTION AND POPULATION

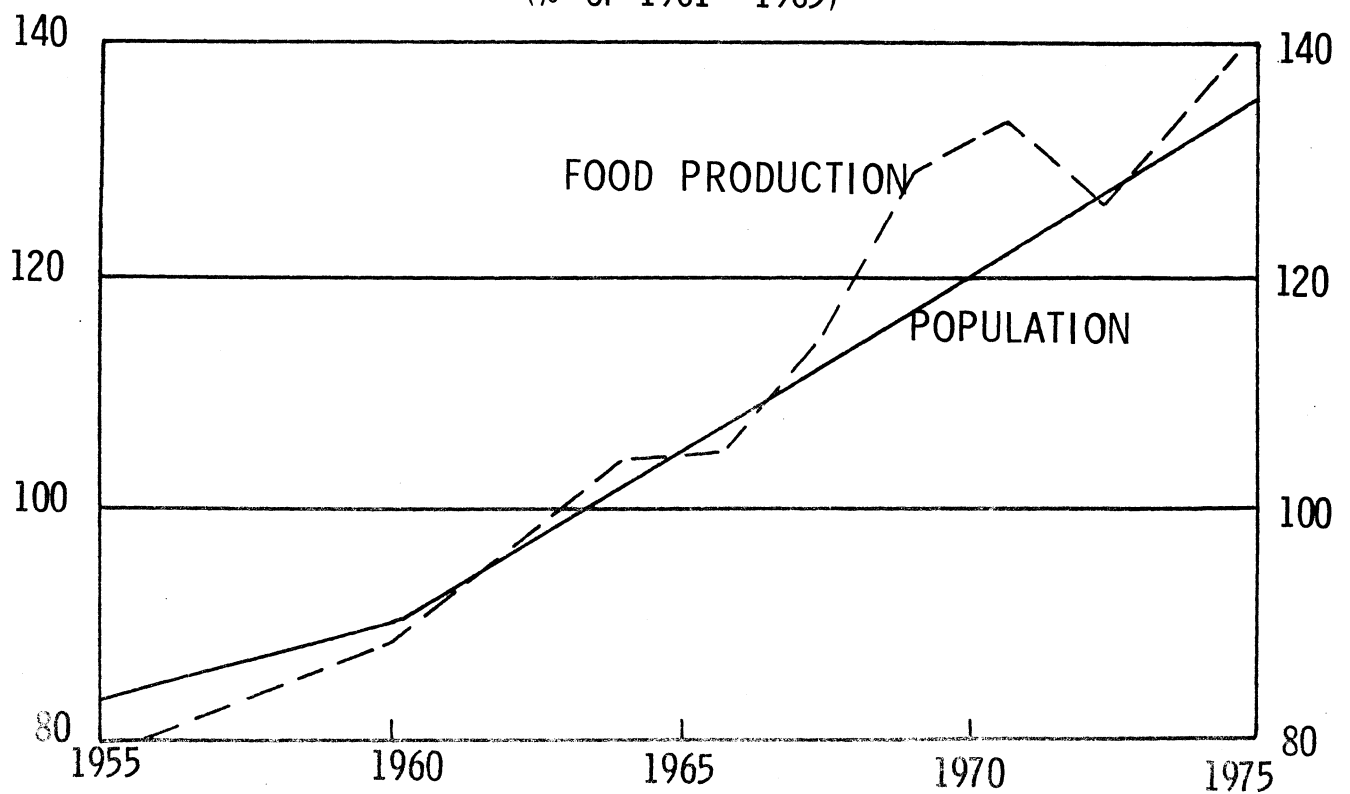
DEVELOPED COUNTRIES

(% of 1961 - 1965)



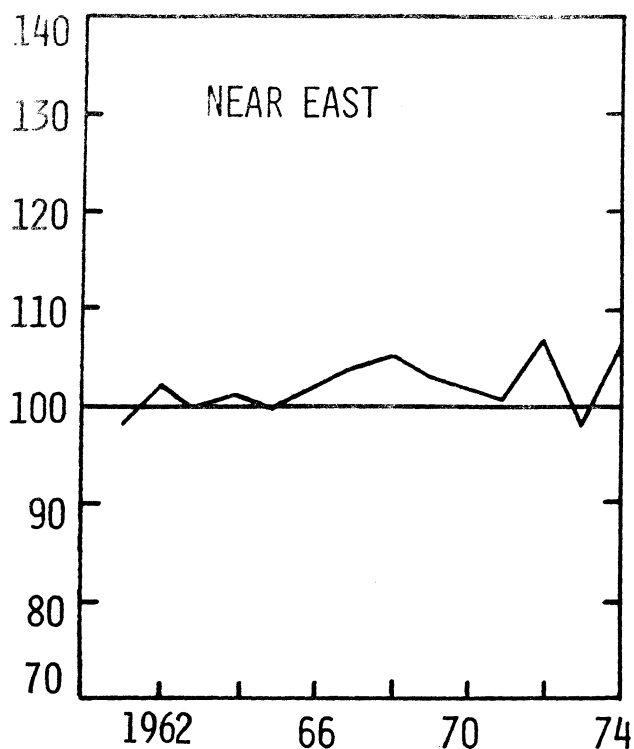
LESS DEVELOPED COUNTRIES

(% of 1961 - 1965)

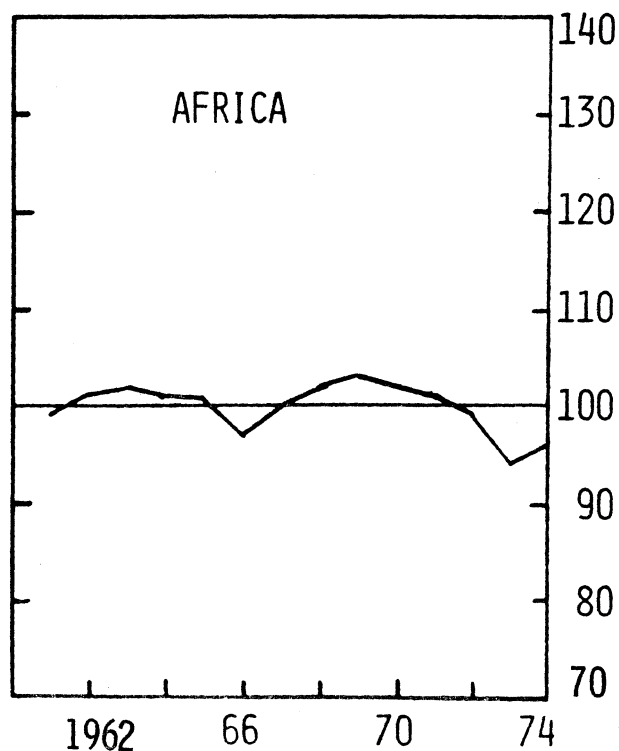
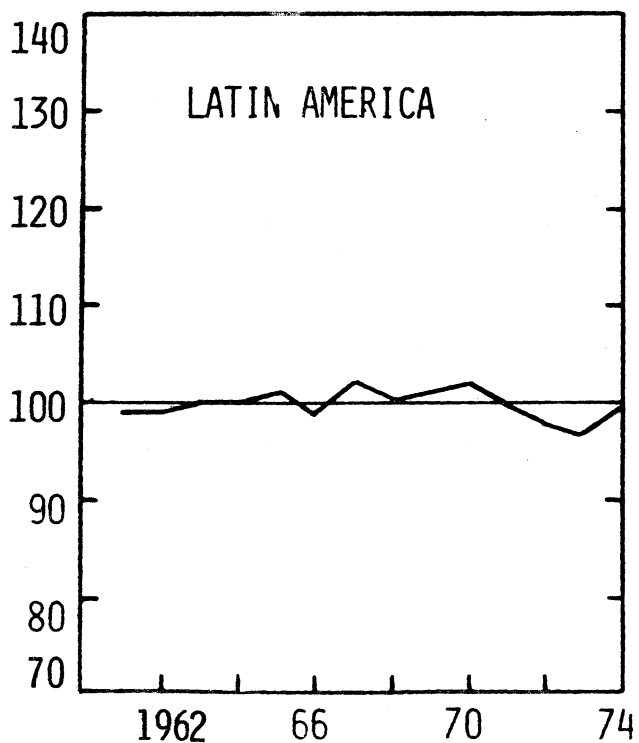
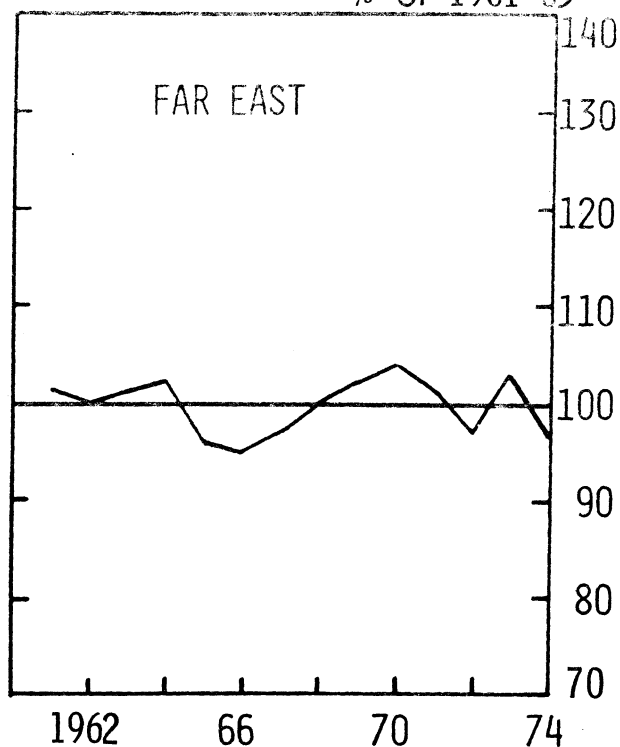


PER CAPITA FOOD PRODUCTION IN SOME LESS DEVELOPED REGIONS

% OF 1961-65



% Of 1961-65



LOOKING TOWARD THE 1985 WORLD FOOD PICTURE

HOW MUCH IS NEEDED?

HOW MUCH CAN WE PRODUCE?

.... IN U.S.?

.... IN WORLD?

WHAT ARE THE LIMITATIONS ?

FOOD DEMAND BY 1985

MORE PEOPLE

PERCENT
1985/1973

.... WORLD	25-30 %
EUROPE	8-10
NORTH AMERICA	15-20
ASIA	30-35
LATIN AMERICA	40-45
AFRICA	40-45

.... ABOUT 2 % PER YEAR IN WORLD

MORE MONEY TRANSLATED TO FOOD DEMAND

.... 0.2 TO 0.5 % PER YEAR

TOTAL DEMAND

.... 2.2 TO 2.5 % PER YEAR

POTENTIAL U.S. OUTPUT BY 1985

COMBINING MORE LAND, INPUTS AND HIGHER YIELDS

<u>PRODUCT</u>	<u>1985 OUTPUT</u>	<u>1973 OUTPUT</u>	<u>1985/1973 %</u>
CORN, BIL. BU.	9.0	5.6	+62
WHEAT, " "	2.3	1.7	+35
SOYBEANS, " "	2.3	1.6	+44
RICE, MIL. TONS	9.2	4.6	+100
COTTON, MIL. BALES	16	12	+33
BEEF OUTPUT, BIL. LBS.	35	22	+59
BEEF COWS, MIL.	59	41	+44

REQUIREMENT

....HIGHER FARM AND FOOD PRICES

....POLICIES TO ASSIST

ARABLE AND POTENTIALLY ARABLE LAND IN WORLD

	<u>NOW</u> (Mil. Acres)	<u>LIKELY CHANGE TO 1985</u> (Percent)	<u>POTENTIAL TIMES NOW</u>
WORLD	3,610	+10 %	2.2
....EUROPE	360	- 7	0.2
....ASIA	1,160	+ 4	0.4
....NORTH AMERICA	940	+15	2.8
....LATIN AMERICA	310	+20	4.3
....AFRICA	540	+10	3.3

WHAT IT TAKES TO BRING MORE LAND UNDER CULTIVATION

CAPITAL INVESTMENT

.... CLEAR, DRAIN, LEVEL, IRRIGATE

.... BUILD ROADS, PROVIDE TRANSPORTATION

RESEARCH AND DEVELOPMENT

....UNLOCK BIOLOGICAL POTENTIAL OF SOILS

....DEVELOP SUITABLE VARIETIES

TIME

....MOVE PEOPLE

....DEVELOP AGRICULTURAL INDUSTRIES

INCENTIVES

.... PRICES AND INCOMES

METHODS TO INCREASE YIELDS BY 1985

MORE FERTILIZER

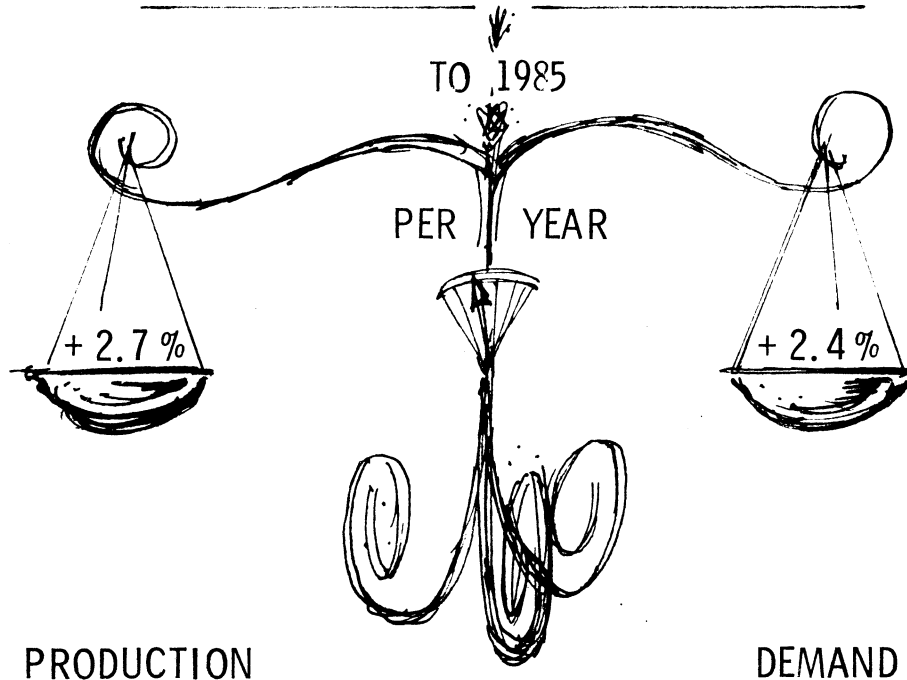
MORE PESTICIDES

IMPROVED VARIETIES

MULTIPLE CROPPING

OTHER PRACTICES

WORLD PRODUCTION/ DEMAND BALANCE



MEANING:

....PRODUCTION A HALF STEP AHEAD OF DEMAND

CAUTIONS:

....DEMAND PROJECTIONS MUCH MORE CERTAIN THAN
PRODUCTION PROJECTIONS

....GROWTH RATES ARE THEMSELVES AVERAGES

....WORLD AVERAGES HIDE CRITICAL REGIONAL PROBLEMS

PROJECTIONS OF WORLD FOOD DEMAND AND PRODUCTION TO 1985

	VOLUME GROWTH RATES (Percent Per Year)	
	<u>DEMAND</u>	<u>PRODUCTION</u>
WORLD	2.4 %	2.7 %
....DEVELOPED COUNTRIES	1.5	2.8
....ALL DEVELOPING COUNTRIES	3.4	2.6
DEVELOPING MARKET ECONOMIES		
AFRICA	3.8	2.5
FAR EAST	3.4	2.4
LATIN AMERICA	3.6	2.9
NEAR EAST	4.0	3.1
ASIAN CENTRALLY PLANNED ECONOMIES		
	3.1	2.6

NATIONS WITH POORLY FED PEOPLE

SOME LIMITATIONS OF

....LAND

....TECHNOLOGY

BUT MAJOR PROBLEMS INCLUDE

....LACK OF INCENTIVES, STORAGE, TRANSPORTATION

....INEQUITABLE TENURE RULES

....INADEQUATE LOW COST CREDIT

....UNFAIR TAXATION

MAJOR LIMITATIONS ARE

....POLITICAL-SOCIAL -ECONOMIC

....CULTURAL AND INSTITUTIONAL

....ILLITERACY AND INCOME

FOOD SCENARIO: MAIN OUTCOMES IN LDC'S

ECONOMIC GROWTH TO:

....EARN INCOME TO BUY FOOD

....PRODUCE FOOD THEMSELVES

DEVELOPED NATIONS OFFSET SHORTFALLS BY:

... .FOOD AID

....FINANCIAL AID

DIETARY EROSION, MALNUTRITION AND STARVATION

WILL THERE BE ENOUGH FOOD FOR ALL?

WORLDTO 1985 PROBABLY

U. S. UNQUALIFIED YES

DEVELOPED COUNTRIES YES

DEVELOPING COUNTRIES JUST ENOUGH
..... MUCH TOO LITTLE

..... DAY TO DAY STRUGGLE

..... AT BEST HUNGER AND MALNUTRITION WILL
CONTINUE ON A WIDE SCALE

..... EVEN SMALL CHANGES IN FOOD OUTPUT FROM
YEAR TO YEAR (POOR WEATHER) POSE THE
THREAT OF WIDESPREAD STARVATION

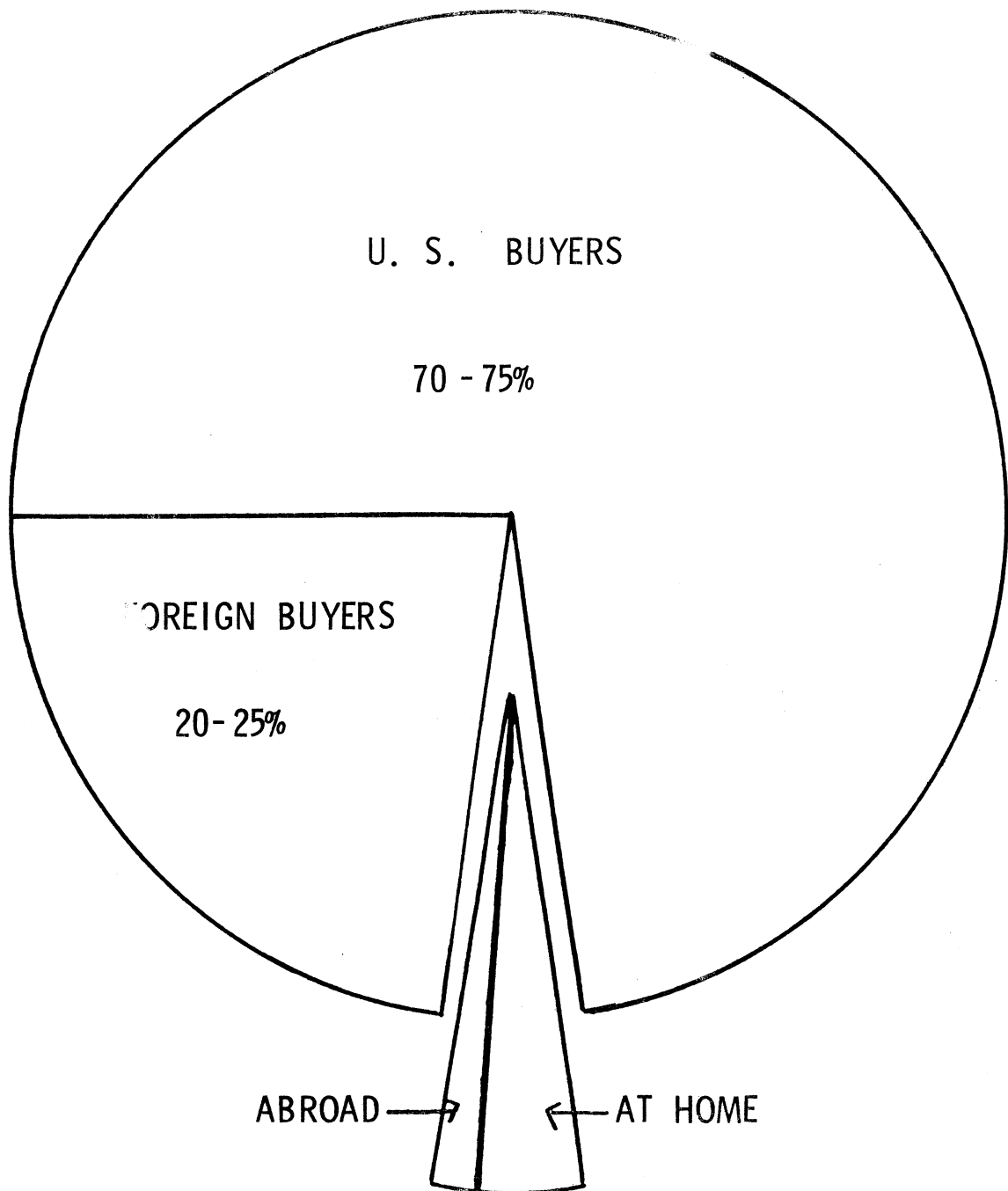
..... ENOUGH FOOD FOR THE WORLD BUT

SOME KEY ISSUES

WHO WILL GET IT?

HOW WILL IT BE SHARED?

WHO GETS U. S. FOOD?



FOOD FOR NEEDY: 4 - 5%

MAJOR FACTORS INFLUENCING U. S. FOOD PRICES

SUPPLIES

.... OUTPUT

.... GRAIN IN STORAGE

.... IMPORTS

DEMANDS

.... DOMESTIC USE

.... EXPORT SALES

.... HUMANITARIAN AID

THE STABILIZING FACTORS:

.... DOMESTIC SUPPLIES

USE BY U. S. CONSUMERS
Percent of Total Supplies

.... HIGH (1962) 76%

.... LOW (1973) 72%

.... DOMESTIC DEMAND

PER CAPITA FOOD USE

Pounds, Retail Weight Equiv.

.... HIGH (1971) 1,448

.... LOW (1965) 1,414

THE GROWTH FACTOR:

.... EXPORT DEMAND

Recent U. S. Agricultural Exports

RECORD (1975) \$21.9 Billion

(1969) \$ 5.9 Billion

WHY THE GROWTH IN EXPORT DEMAND?

PREDICTABLE FACTORS

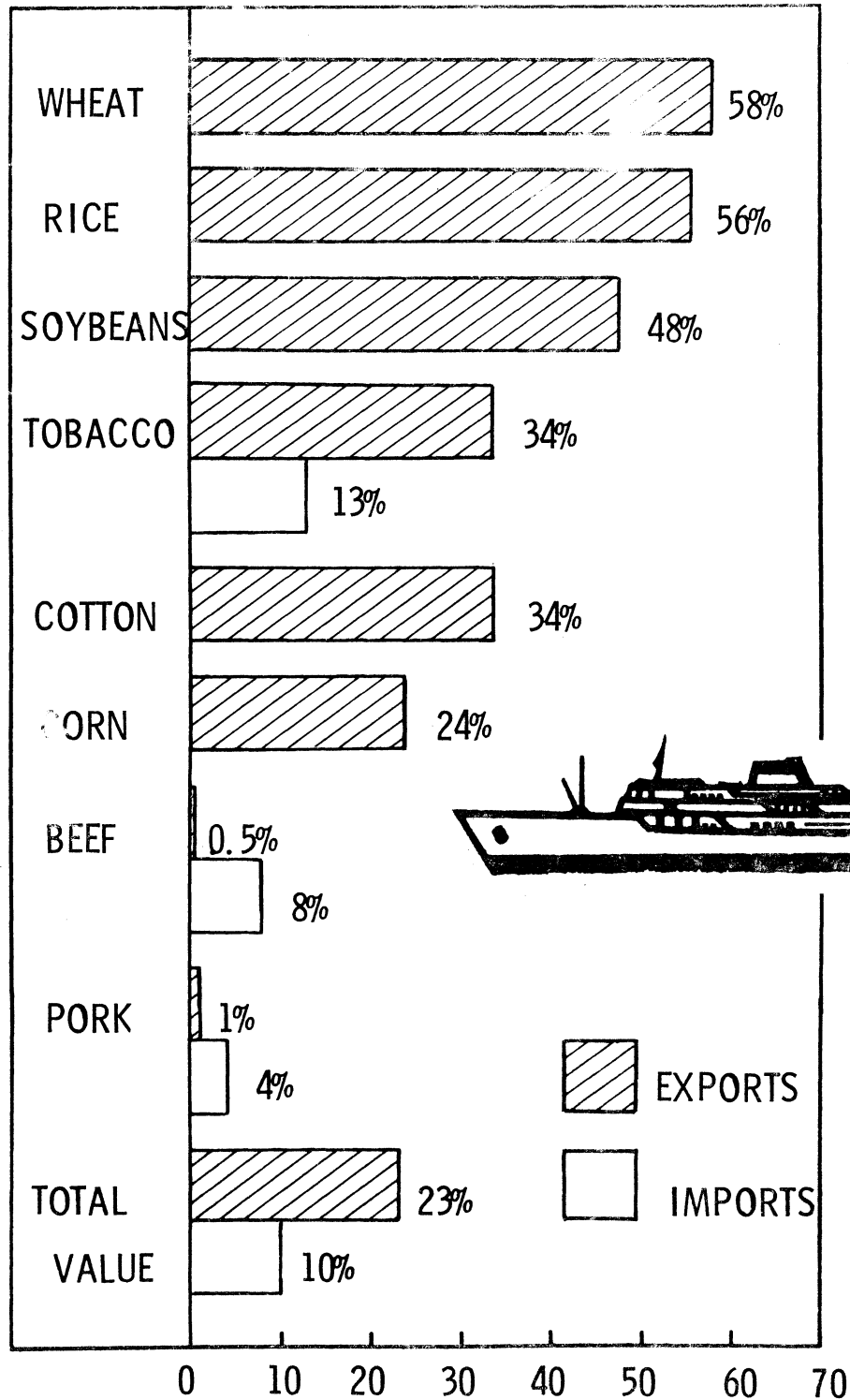
- MORE PEOPLE: +2% PER YEAR
- RISING INCOMES: +3% PER YEAR
- SLOW-DOWN IN GREEN REVOLUTION

UNCERTAIN, UNPREDICTABLE FACTORS

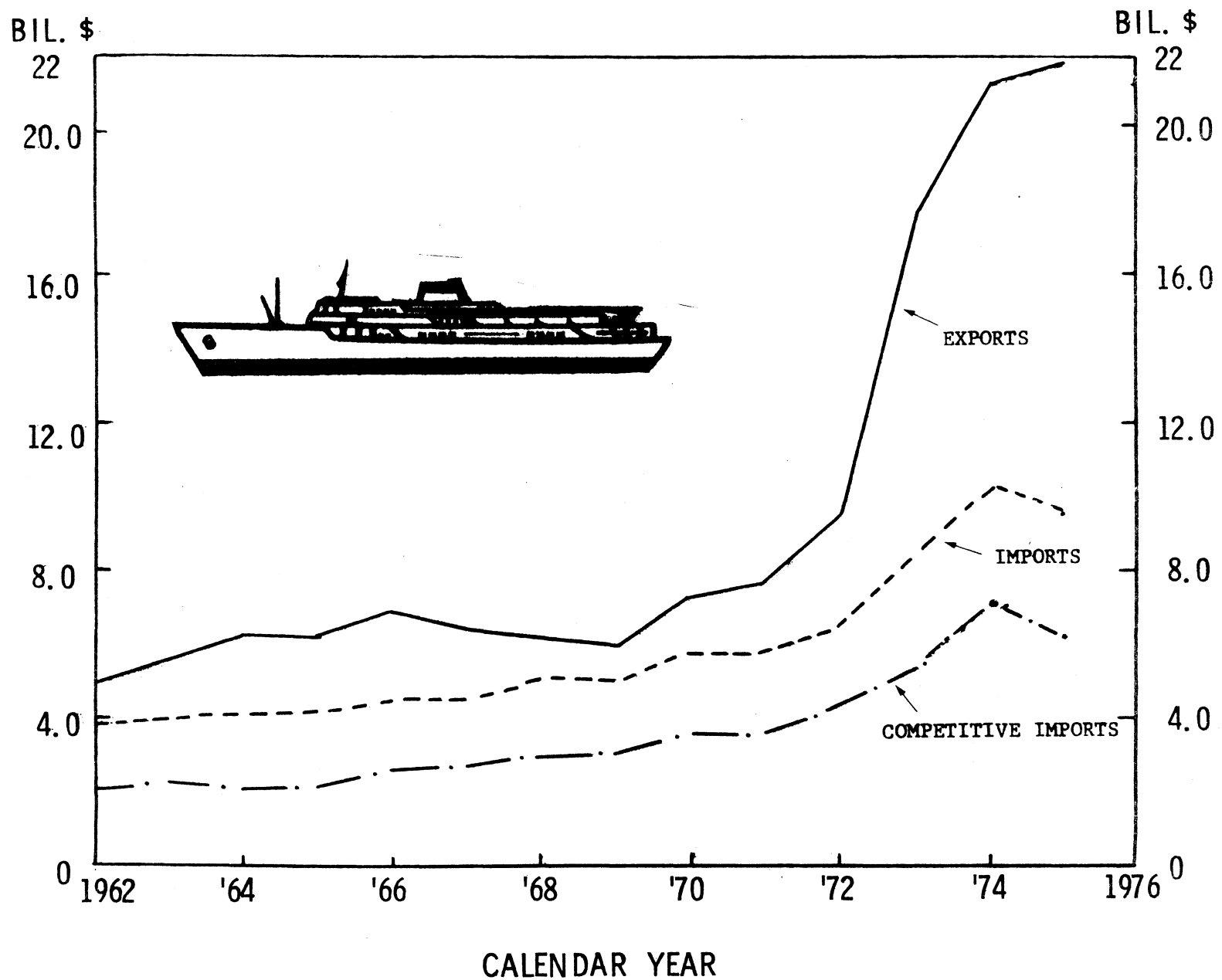
- POOR WEATHER, CROP SHORTFALLS, FISHING FAILURES
- DEVALUATION OF U. S. CURRENCY
- ENERGY CRISIS
- BALANCE-OF-PAYMENT PROBLEMS
- INFLATION, RECESSION
- POLICY CHANGES IN OTHER NATIONS

WHAT DO WE TRADE :

AS PERCENT OF U. S. OUTPUT, 1975



VALUE OF AGRICULTURAL EXPORTS AND IMPORTS



SOME

TRADE

PRINCIPLES

TRADE SOMETHING WE HAVE FOR SOMETHING WE WOULD
RATHER HAVE

WHY TRADE?

.... CAN'T PRODUCE

.... BUY CHEAPER

.... BETTER QUALITY

TRADE MUTUALLY ADVANTAGEOUS OVER TIME

CONTRIBUTIONS OF TRADE

.... BETTER LIVING

.... MORE JOBS

.... BROADENS MARKETS

.... NOT SELF SUFFICIENT: INTERDEPENDENT

MUST BUY TO SELL

FARM

EXPORTS -

SOME

IMPACTS

MULTIPLIER

.... ADD \$1 TO FARM EXPORTS = 95¢ TO NONFARM SECTOR

.... \$8.4 BIL. ADDED IN FISCAL 1974

MEANING TO FARM SECTOR: \$8.4 BIL. ADDED

.... HIGHER PRICES AND INCOMES

.... EARNED FOREIGN EXCHANGE

MEANING TO NONFARM SECTOR: \$7.2 BIL. ADDED

.... JOBS: ABOUT 500,000 ADDED

.... AFTER TAX INCOME: \$40-45 PER PERSON IN U. S.

.... HIGHER FOOD COST: \$20-25 PER PERSON

.... BUYS ENERGY: JOBS: HOMES: CARS

TRADE POLICIES AND FOOD PRICES

LESS FOOD EXPORTED

MORE FOOD EXPORTED

HIGHER ← CHEAPER ← FOOD → HIGHER → LOWER

WEAKER ← VALUE OF DOLLAR → STRONGER

HIGHER ← COST OF: ELEC. EQUIP. → CHEAPER

HIGHER ← TEXTILES → CHEAPER

LESS ← AMOUNT BOUGHT: AUTOS → MORE

LESS ← FUEL → MORE

WHO WILL GET IT?

IN THE U. S.

.... NOT A PROBLEM OF ENOUGH FOOD

.... BUT, A CONCERN OF COST AND PRICE

HOW HIGH?

HOW STABLE?

HOW PREDICTABLE?

POLICY OPTIONS

1. FREER MARKET
2. LIFT IMPORT RESTRICTIONS
3. FOOD RESERVES PROGRAM
4. CONTROL EXPORTS
5. EXPAND CONSUMER SUBSIDIES
6. PRODUCTION CONTROLS

WHY DO WE SHARE OUR FOOD?

EQUITY

.... INEQUALITIES EXIST IN THE DISTRIBUTION OF
WEALTH AND INCOME

INEQUALITIES BETWEEN NATIONS

AMONG PEOPLE WITHIN NATIONS

.... INEQUALITIES MAY BE TEMPORARY OR PERMANENT

ACTS OF GOD - NATURAL DISASTERS

ACTS OF MAN - INSTITUTIONAL CONSTRAINTS

VARIATION IN HUMAN CAPACITY

THE YOUNG

THE OLD

THE HANDICAPPED

MUTUAL INTEREST

.... SHARING MAY BE IN OUR OWN SELF INTEREST

- TRADE - OUR OUTPUT FOR SOMETHING WE NEED

- POLICY AND PEACE

WHY THE GREAT CONCERN ABOUT FOOD SHARING NOW?

.... HUNGER PROBLEM HAS EXISTED THROUGH TIME

BUT NOW WE ARE CONCERNED ABOUT -

FAMINE	DROUGHTS
RUSSIAN WHEAT DEALS	TRIAGE
MORATORIUMS	HIGH FOOD PRICES

.... SIGNALS A NEW WAY OF LOOKING AT PEOPLE AND
RESOURCES

RECOGNITION OF FINITE RESOURCES, SCARCITY
AND LIMITS TO GROWTH

.... SHARING NOW PERCEIVED AS

TAKING AWAY: RATHER THAN GIVING

.... THIS RAISES LEVEL OF CONCERN AND LEADS TO
HARD CHOICES ABOUT MAN'S RESPONSIBILITY
TO HIMSELF

HOW DO WE SHARE?

THE MARKET SYSTEM

- PRICE ALLOCATES OR SHARES FOOD AMONG
 - U. S. BUYERS
 - FOREIGN BUYERS
- MARKET SYSTEM LARGELY RESTRICTED TO THOSE WITH MONEY
- COST OF SHARING THROUGH HIGHER PRICES
 - SEVERE ON LOW INCOME PEOPLE
 - PERCENTAGE OF INCOME SPENT ON FOOD

BY NON-MARKET METHODS

- ABROAD
 - FOOD AID
- AT HOME
 - FOOD STAMPS
 - SCHOOL LUNCHES
 - OTHER - PRIVATE
- COST - BORNE THROUGH HIGHER FOOD PRICES IN MARKET PLUS TAXES, DONATIONS OR OTHER ASSESSMENTS.

NON-MARKET SHARING AMOUNTS TO 4-5% OF DOMESTIC
FOOD OUTPUT

DOMESTIC NON-MARKET SHARING

FOOD RELATED PROGRAMS

.... FOOD STAMP PLAN \$6 BILLION

20+ MILLION PARTICIPANTS
25 MILLION ELIGIBLE TO PARTICIPATE

.... CHILD NUTRITION PROGRAMS

SCHOOL LUNCH PROGRAM \$1.8 BILLION
25+ MILLION PARTICIPANTS

.... FOOD TO NEEDY (DIRECT) \$0.2 BILLION

INCOME RELATED PROGRAMS

.... FAMILY ASSISTANCE PLANS

OLD AGE AND SURVIVOR INSURANCE
UNEMPLOYMENT INSURANCE
AID TO FAMILIES OF DEPENDENT CHILDREN
AID TO BLIND AND DISABLED

.... INCOME PROGRAMS INCREASE FOOD ONLY TO THE
EXTENT THAT RECIPIENTS DESIRE MORE FOOD

DOMESTIC FOOD SHARING POLICY

.... QUESTION IS NOT IF,

BUT HOW AND HOW MUCH

.... DIRECT FOOD SHARING

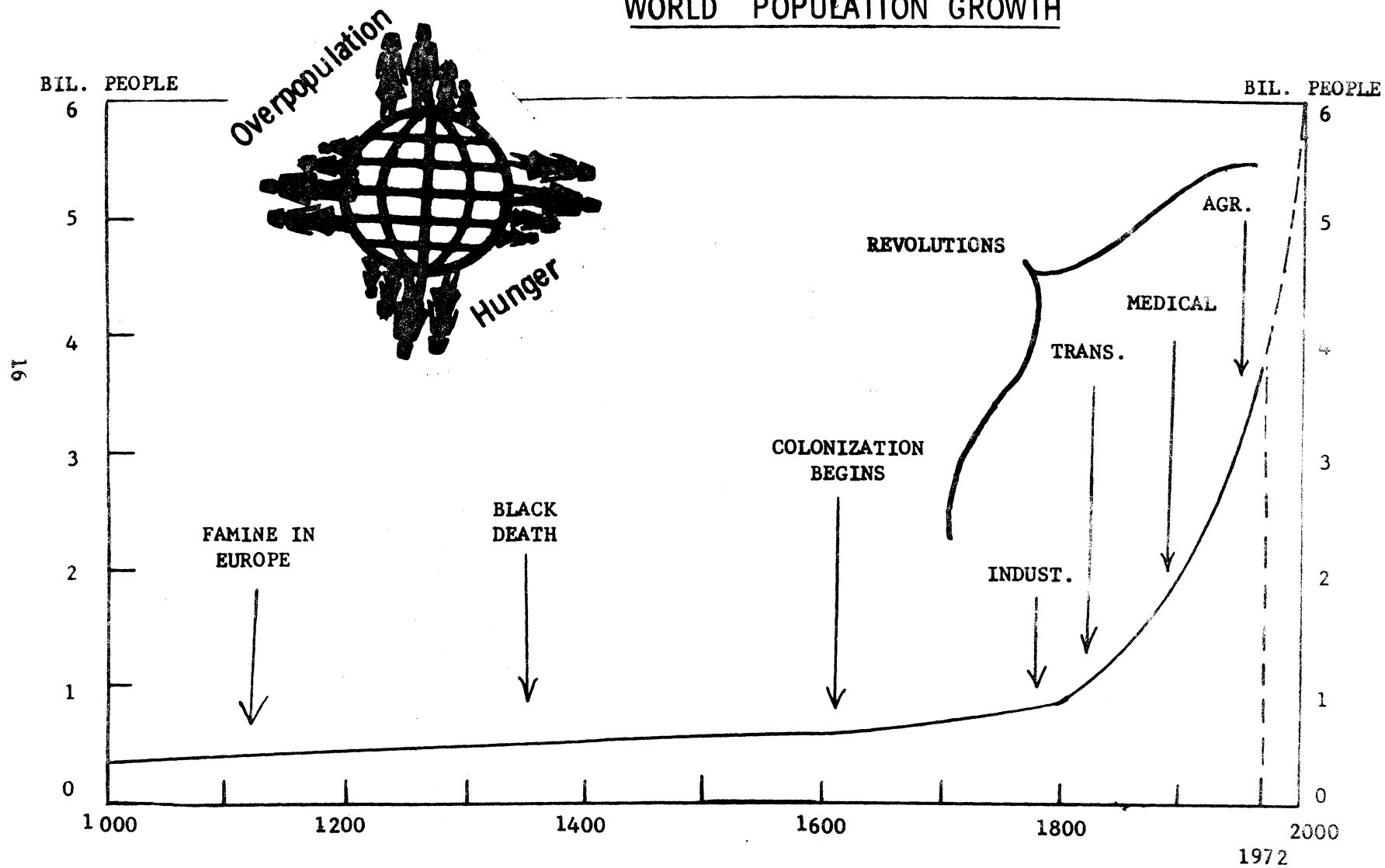
VERSUS INCOME TRANSFER

.... WHO SHOULD BE ELIGIBLE AND

HOW MUCH SHOULD THEY RECEIVE?

TEN CENTURIES OF

WORLD POPULATION GROWTH



U. S.

AID

RECORD

FOOD ASSISTANCE:

.... 46% OF ALL FOOD AID SINCE 1962

.... \$25 BIL. IN P. L. 480: 145 MIL. TONS OF GRAIN
SINCE 1954

DEVELOPMENT AID:

.... \$1.5 BIL. IN TECHNICAL HELP LAST 10 YEARS

.... 1,000 TRAINED PER YEAR LAST 22 YEARS

.... 1,000 MAN YEARS BY LAND GRANT COLLEGES

.... \$11 BIL. OF LOCAL CURRENCY GENERATED FOR
USE BY P. L. 480

WORLD FOOD CONFERENCE IN BRIEF

FOOD PRODUCTION:

.... REORDER PRIORITIES

.... FUNDS FOR RESEARCH AND DEVELOPMENT

FOOD AID:

.... 10 MIL. TONS

FOOD RESERVES:

.... NATIONAL STOCKPILES

GLOBAL INFORMATION AND WARNING SYSTEM: FAO

.... GRAINS

TRADE

.... REDUCE TRADE BARRIERS

THE FOOD CHALLENGE

HELPING UNDERDEVELOPED COUNTRIES

.... TECHNICAL ASSISTANCE

PRODUCE FOOD

EXPAND FERTILIZER OUTPUT, ETC.

.... FINANCIAL ASSISTANCE

ECONOMIC DEVELOPMENT

IMPROVE MARKETING

.... FOOD RESERVES

.... FOOD AID

.... FAMILY PLANNING

METHODS

.... PUBLIC

.... PRIVATE

LEVEL?